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10/795,949	03/08/2004	Hidekazu Fukuda	JP920030015US1	1420

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EXAMINER
KAO, WEI PO ERIC

ART UNIT	PAPER NUMBER
2609	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _08 March 2004_.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-19_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-19_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _08 March 2004_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.　　Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2.　　Claims 1-2, 4-5, 7-10 and 12-16 are objected to under 37 CFR 1.75 because of the following informalities:

The claimed terms, "said/the address changed packet," of claims 1, 2, 4, 5, 7, 10, 12 and 16 seem to refer to an unicast address change packet. It is suggested to expressly disclose the terms as "said/the unicast address changed packet".

Claims 8-9 and 13-15 are objected to because they depend on objected claims, namely claims 7 and 12.

Appropriate correction is required.

Claim Rejection - 35 USC § 101

3.　　35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 18 and 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The Claims 18 and 19 are directed to a non-statutory subject matter because the claimed term, "a medium on which a computer program is recorded," is not a process, machine, manufacturer, or composition of matter, or any new and useful improvement thereof.

Note: To overcome the rejection, it is suggested to the applicant to amend the claims to be written in terms of "computer" readable medium, stored with, embodied with or encoded with a "computer" program or computer executable instructions.

Claim Rejection - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For Claim 17, the claimed terms, "said subnetwork," of Line 6 and 9 have no antecedent basis.

Claim Rejection - 35 USC § 103

6.   This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rodriguez, U.S. Publication No 20020042706 in view of Dunne et al, U.S. Patent No 5740375.

For Claim 1, Rodriguez teaches that **a broadcast processing system** (see Abstract, Figure 1 Element 10) **comprising: a first broadcast relay belonging to a first subnetwork** (see Figure 1 Elements 101 and 103, Paragraph [0017]) **for, upon detecting a network-wide broadcast packet, generating a unicast packet in which the destination address is an address of a second broadcast relay belonging to a second subnetwork** (see Figure 1 Elements 102, 104 and 108, Paragraph [0018] [0028-0029] [0032]) **and outputting the unicast packet inside the first subnetwork** (see Figures 1 and 2 e.g. each gateway has ability to output a packet inside the subnetwork it belongs to); **the second broadcast relay belonging to the second subnetwork**

for, upon receiving a packet addressed thereto, generating a first-type broadcast packet in which the destination address of the received packet is changed to the one related to a first-type broadcast, and outputting the first-type broadcast packet inside the second subnetwork (see Figure 1 Elements 102, 104 and 109, Paragraph [0019] [0021-0024] [0029] [0032]). For Claim 2, Rodriguez teaches that the system further comprising: the second broadcast relay generates (see Figure 2 Elements 102 and 104), upon detecting a packet in the second subnetwork, a unicast packet in which the destination address is an address of the first broadcast relay (see Figure 2 Elements 101, 103 and 112, Paragraph [0030] [0032]) and outputs the address changed packet inside the second subnetwork (see Figures 1 and 2 e.g. each gateway has ability to output a packet inside the subnetwork it belongs to); the first broadcast relay generates, upon receiving a packet whose destination address is its own address, a first-type broadcast packet in which the destination address of the address changed packet is changed to the one related to a first-type broadcast and outputs the first-type broadcast packet inside the first subnetwork (see Figure 2 Elements 101, 103 and 113, Paragraph [0030] [0032]). For Claim 3, Rodriguez teaches that the system wherein the first-type broadcast is a broadcast dedicated to the subnetwork in which it is outputted (see Paragraph [0022] [0026]). For Claim 5, Rodriguez teaches that the system wherein the first and second subnetworks are interconnected via a subnetwork other than the first and second subnetworks, or the Internet (see Paragraph [0018] [0021] [0025] [0027]). For Claim 6, Rodriguez teaches that the system wherein there exist a plurality of the second subnetworks having network addresses which are different from each other, the second broadcast relay exists in each second subnetwork, and upon detecting one network-wide broadcast packet, the first broadcast relay generates a plurality of unicast packets, from the network-wide broadcast packet, in which the destination address is the addresses of the respective second broadcast relays and outputs the plurality of unicast packets inside the first subnetwork (see Figure 1 Elements 102, 103 and 108, Paragraph [0018] [0028-0029] [0032]).

For Claims 1 and 6, Rodriguez does not teach that the system comprising: at least a first router for preventing a network-wide broadcast packet in a first subnetwork from

reaching a second subnetwork which is different from the first subnetwork; the first broadcast relay for generating a unicast address changed packet in which a destination address of the network-wide broadcast packet is changed to an address of the second broadcast relay belonging to the second subnetwork. For Claim 2, Rodriguez does not teach that the system comprising: at least a second router for preventing an address changed packet in the second subnetwork from reaching the first subnetwork; the second broadcast relay for generating a unicast address changed packet in which a destination address of the network-wide broadcast packet is changed to an address of the first broadcast relay belonging to the second subnetwork. For Claim 4, Rodriguez does not teach that the system wherein the first subnetwork includes a router for preventing the address changed packet in the first subnetwork from going out of the first subnetwork, and the second subnetwork includes a router for preventing the address changed packet in the second subnetwork from going out of the second subnetwork.

For Claims 1 and 6, Dunne et al teach that the system comprising: at least a first router for preventing a network-wide broadcast packet in a first subnetwork from reaching a second subnetwork which is different from the first subnetwork (see Column 1 Line 35-48 e.g. it is well known in the art that a router is often configured to block broadcast packets in order to prevent the occurrence of broadcast storm); the first broadcast relay for generating a unicast address changed packet in which a destination address of the network-wide broadcast packet is changed to an address of the second broadcast relay belonging to the second subnetwork (see Abstract, Figure 8, Column 4 Line 60-67, Column 5 Line 1-29). For Claim 2, Dunne et al teach that the system comprising: at least a second router for preventing an address changed packet in the second subnetwork from reaching the first subnetwork (see Column 1 Line 35-48 e.g. it is well known in the art that a router is often configured to allow certain packets with valid destination address in order to prevent attack from outside of a network); the second broadcast relay for generating a unicast address changed packet in which a destination address of the network-wide broadcast packet is changed to an address of the first broadcast relay belonging to the second subnetwork (see Abstract, Figure 8, Column 4 Line 60-67, Column 5 Line 1-29). For Claim 4, Dunne et al teach that the system

wherein the first subnetwork includes a router for preventing the address changed packet in the first subnetwork from going out of the first subnetwork, and the second subnetwork includes a router for preventing the address changed packet in the second subnetwork from going out of the second subnetwork (see Column 1 Line 35-48 e.g. it is well known in the art that a router is often configured to allow certain packets with valid destination address in order to prevent attack from outside of a network).

Claims 7, 10-13 and 16-19 are method/apparatus/article of manufacture claims corresponding to system claims 1 and 2, and are therefore rejected under the same reason set forth in this paragraph. Claims 8-9 and 14-15 are method/apparatus claims corresponding to system claims 3 and 5, and are therefore rejected under the same reason set forth in this paragraph.

Rodriguez and Dunne et al are analogous art because they are from the same field of processing and delivering broadcast packets across different subnetworks in a communication network.
At the time of the invention, it would have been obvious to a person ordinary skill in the art to implement Dunne's method of changing destination addresses of a broadcast packet into Rodriguez's invention as a part of the functionality of a gateway node.
The motivation would have been that Dunne's method provides a flexible and fast way to modify the destination address of a broadcast packet especially when it is intended to transmit to multiple destinations at different network level, which further reduce the resource required for a distribution node to handle the task.
Therefore, it would have been obvious to combine Rodriguez and Dunne et al to obtain the claims 1-19.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chiou et al, U.S. Patent No 6473413, Civanlar et al, U.S. Patent No 6483832, Yim, U.S. Publication No 20020052972, Bommareddy et al, U.S. Patent No 6880089 and Abir, U.S.

Publication No 20030126252 are cited to show a similar method of delivering broadcast packets among different subnetworks in a network.

11.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wei-po Kao whose telephone number is (571)270-3128. The examiner can normally be reached on Monday through Friday, 8:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dong Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W.K.

DANG T. TON
SUPERVISORY PATENT EXAMINER